

5

Notice of Allowability	Application No.	Applicant(s)	
	10/655,237	DRUSCHITZ ET AL.	
	Examiner	Art Unit	
	Deborah Yee	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to applicants' remarks dated 10-12-05.
2. ☒ The allowed claim(s) is/are 1-27.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>10-12-05</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Deborah Yee
Primary Examiner
Art Unit: 1742

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. David LaPrairie on Feb. 14, 2006.

The application has been amended as follows :

Claims 28-36 have been cancelled.

Allowable Subject Matter

1. Claims 1 to 27 are allowed.

2. The following is an examiner's statement of reasons for allowance: The method of making the machinable austempered iron article, as claimed, is not taught or fairly suggested by the art of record for the reasons set forth in applicant's remarks dated 10-12-05. Applicants have discovered that a machinable austempered cast iron article having improved strength, ductility, machinability, fatigue performance, and resistance to environment cracking can be obtained by subjecting a cast iron alloy having a substantially pearlitic microstructure to austenitizing in an intercritical temperature range of 1380 to 1500F for a period of at least 10 minutes to produce a ferritic+austenitic microstructure followed by quenching at a rate sufficient to prevent pearlite formation and then austempering the ferritic+austenitic microstructure in an austempering temperature range of from 575 to 750F for a period of at least 8 minutes to produce a microstructure of equiaxed ferrite with islands of austenite and cooling the microstructure to ambient temperature. New and unexpected results for present invention alloy in comparison to conventional regular austempered ductile iron and conventional regular ductile iron are established in Tables 5 to 8 in applicant's specification.

3. As pointed out in applicant's remarks dated 10-12-05, the prior art reference (Deards et al) does not teach or fairly suggest austenitizing to obtain a ferritic plus austenitic microstructure and austempering to produce a microstructure comprising a continuous matrix of equiaxed ferrite with islands of austenite.

Art Unit: 1742

Claims in case 10/655237 are patentable over Wilde et al (US Patent 6,258,180). Prior art method claim 23 to 34 in columns 9-10 discloses a method austempering a ferritic and/or pearlite iron whereas present invention claims are directed to austenitizing a substantially pearlitic cast iron followed by austenitizing at 1380 to 1500F for at least 10 minutes to produce a ferritic plus austenitic microstructure.

Claims in case 10/655,236 are patentable over admitted prior art of Wilde et al (US Patent 6,258,180) lines 34 to 54 in column 2. Prior art does not teach a starting material of substantially pearlitic microstructure (at least 50% pearlite). Also prior art austenitizes at 1550 to 1700F to achieve austenite and austenite saturated with carbon whereas present invention austenizes at a lower temperature of 1380 to 1500 for at least 10 minutes to produce a ferritic+austenite microstructure. Also prior art method results in a cast iron having austenitic –acicular ferrite whereas present invention recites a different microstructure comprising equiaxed ferrite with islands of austenite. Applicant has provided comparative test data in Tables 5 to 9 showing that conventional austempered ductile iron (ADI) is inferior to present invention with regard to machinability, fatigue performance and environmental cracking.


Art Unit: 1742

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on Monday-Friday from 6:00 to 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Deborah Yee
Primary Examiner
Art Unit 1742

dy